PROCEEDINGS OF THE
ROYAL ENTOMOLOGICAL SOCIETY
OF LONDON

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ORDINARY MEETING

WEDNESDAY, 2nd NOVEMBER, at 5.30 p.m.

AGENDA.

1. Confirmation of the Proceedings of the Ordinary Meeting held on 5th October, 1955.
2. Recommendations of candidates for Fellowship. First reading.
3. Recommendations of candidates for Fellowship. Second reading.
4. Announcement of election of new Fellows.
5. Additions to the Library. [See p. 38.]
6. Admission of Fellows.
7. Papers accepted for publication in the *Transactions*.
8. Exhibits.

As the December meeting will be devoted to exhibits and brief communications, Fellows are requested to reserve any exhibits that are not urgent until that meeting (7th December).

9. Communications.

1. Dr. C. G. Johnson.

The vertical distribution of insects in the air.

[ABSTRACT.]

The aim of past work at Rothamsted and Cardington has been to study the vertical distribution of aphid density in the air up to many hundreds of feet, and more recently to extend this study to other insects.

The vertical gradient of insect density and hence the general collective situation in the air can usually be succinctly expressed, if only approximately, as a

single parameter, the regression coefficient of log density to log altitude. Characteristic variations in this during the day and season, which are correlated with the degree of atmospheric stability, indicate the weather conditions, times and seasons at which more or less widespread dispersal occurs.

2. Dr. F. van Emden.

On the importance of larval characters for taxonomy in insects.

[Abstract.]

As secondary forms the larvae of the Pterygota cannot be of more decisive importance for taxonomy than the adults. On the other hand, these larvae have evolved concurrently with the final stage and are subject to an identical degree of genetic isolation, for which reasons their characters are, basically, not of lesser importance than those of the adults. In most cases the structure of larva and adult is so different, even in Hemimetabola, that the classification of the two stages must make use of quite independent characters. Larval characters, therefore, supply a means for checking taxonomic conclusions or even, where groups of adults are extremely uniform or especially modified, may prove to be of greater taxonomic importance than adult characters. Examples for the importance of larval characters for identification, classification and phylogenetic research in various orders will be illustrated by film strip.

Tea will be served in the Library before the meeting.

NOTICE

Tenth International Congress of Entomology.

As most Fellows will have already heard the Tenth International Congress of Entomology will be held in Montreal from 17th–25th August, 1956.

Any Fellow wishing to receive detailed notices of the Congress should write to the Secretary of the Congress, Mr. J. A. Downes, Division of Entomology, Science Service Building, Ottawa, Canada.

The Society is in touch with the shipping companies and air lines and hopes to be able to arrange some fare concessions. Anyone who proposes to go to the Congress is invited to write to the Registrar.

PROCEEDINGS OF THE ORDINARY MEETING HELD ON 5TH OCTOBER, 1955.

Dr. W. J. HALL, C.M.G., M.C., President, in the Chair.

Present, 83 Fellows and 19 Visitors.

Before the meeting formally opened the President extended a welcome to Dr. Haaf of the Frey Museum, Munich, and Dr. Lohse from Hamburg.

The minutes of the Ordinary Meeting held on 7th September were confirmed and signed by the President.

The Secretary read an announcement regarding the Tenth International Congress of Entomology to be held in Montreal from 17th–25th August, 1956. [See page 34.]

The names of the following candidates for election were read for the first time: Mr. Victor Ammah-Attoh; Mr. R. Mohammad Zainal Arif; Mr. Onkar Singh Bindra, B.Sc.; Mr. Donald Alfred Chant, M.A.; Dr. Evan Elias Edwards, D.Sc.; Mr. Helmut Fritz van Emden, B.Sc.; Mr. Robert Hammond; Miss Christina Maria Felicitas von Hayek; Mr. Manohar Lal Jerath, M.Sc.; Mr. Hirendra Lal Kundu, M.Sc.; Mr. Trevor Lewis, B.Sc.; Dr. Sami Riad Abdel Malek; Mr. Sarveshwar Dayal Mathur; Mr. P. R. Parameswaran Pillai; Mr. Ralph Owen Rye, B.Sc.; Mr. Rajendra Bahadur Singh, M.Sc.; Miss Joan Gwyneth Thomas; Mr. Gerald Vincent Weerawardane; Mr. Walter Wilkinson and Mr. Geoffrey Harvey Wotton Wood.

For the second time (taken as read): Dr. Fred Corry Bishopp; Mr. John Gordon Blower; Mr. Alastair John Michael Carnegie; Mr. Donald Henry Colless; Mr. Clive Arthur Edwards; Mr. Gunderico Wladimiro Santos da Veiga Ferreira; Mrs. Maria Corinta Ferreira Fontes de Melo Ferreira; Professor Dr. Flavio O. da Fonseca; Dr. Caryl Parker Haskins; Mr. William D. Hedgecock; Mr. James Mather Hoy; Mr. John Makgill Kelsey; Mr. P. Krishna Menon; Mr. Neville John Myers; Mrs. Eleanor Alice May Prosser; Mr. George Romanus Shidrawi.

The Secretary read the names of the following newly elected Fellows of the Society: Mr. Hari Har Nath Baijal, 3490, Seetia Gali, Agra, U.P., India; Mr. Peterson Becker, B.Sc., 59, Southpark Avenue, Glasgow, W.2; Mr. Christopher Bosworth Cottrell, P.O. Box 593, Lusaka, Northern Rhodesia; Mr. Peter Noel Crow, Ravensdale, Ockham Road North, East Horsley, nr. Leatherhead, Surrey; Mr. Frederick Henry Jacob, Ministry of Agriculture, Fisheries and Food, Plant Pathology Laboratory, Harpenden, Herts.; Dr. John Richard Erichsen Jones, D.Sc., University College of Wales, Zoology Department, Cambrian Street, Aberystwyth, Cardigan; Mr. David Lindsey Milne, Rothamsted Experimental, Station, Harpenden, Herts.; Dr. Waclaw Szumkowski, Departmento de Plagas y Enfermedades, Centro de Investigaciones Agronômicas, Ministerio de Agricultura y Cría, Maracay, Estado Aragua, Venezuela; Mr. Raymond William James Uffen, 4, Vaughan Avenue, Stamford Brook, London, W.6; Dr. Leonard Herbert Williams, 31, Armour Road, Tilehurst, Reading, Berks.

Thanks were voted to donors of gifts to the Library since the last meeting.

Mr. I. A. D. Byres signed the Obligation Book and was admitted a Fellow of the Society.

The following paper, accepted for publication in the *Transactions*, was read in Title.

" On the structure, function and the distribution of the prolegs of the Panorpoidea, with a criticism of the Berlese-Imms theory," by H. E. Hinton.

Miss D. J. Jackson exhibited specimens of *Caraphractus cinctus* Walker to show the variation in wing size of this Mymarid, which is a parasite of the eggs of various Dytiscidae. From large eggs (*Dytiscus*) many individuals may emerge successfully from one egg but there is usually a residue of unsuccessful larvae or pupae which die. In Colymbetine eggs from one to seven individuals may develop and residual larvae are rare. The specimens reared from the Colymbetine eggs showed marked variation in wing size. The large individuals were always macropterous, but the smallest, at least the females and occasionally the males, were brachypterous, and all intermediates occurred. When five or more individuals emerged from one *Agabus* egg some or all of them were small and brachypterous ; where only one or two developed they were large and fully winged. Overcrowding in the eggs, with resulting insufficiency of food, appears to be the cause of the production of small specimens with reduced wings. In *Dytiscus* eggs, brachypterous specimens are less common, and it is thought that, when overcrowding occurs, the less viable die within the host egg, perhaps due to an insufficient air supply.

Breeding experiments, using Colymbetine eggs, have shown that when a macropterous female lays several eggs in a small host egg, some at least of the progeny are small and have reduced wings, and, conversely, when a brachypterous female lays only one or two eggs in one host the progeny are of good size with long wings. Rimsky-Korsakov has described a short-winged form of *Caraphractus* as a new species, but it would appear from the above that only one species is involved.

In the discussion which followed, Mr. G. J. Kerrich said that in the parasitic Hymenoptera there were species that were always brachypterous as species, at least in one sex ; and others, such as *Cea pulicaris* Walker, where fully macropterous and very short-winged forms but no intermediates were known, and the difference would be thought attributable to a straight genetic factor. In this case of variable brachyptery, Miss Jackson seemed to have shown conclusively that it was due to factors of nutrition and perhaps also of overcrowding. Presumably Rimsky-Korsakov had described a brachypterous form as a new species, having insufficient knowledge of its biology.

In reply to an enquiry by Mr. J. G. Skellam, Miss Jackson said she had not had an opportunity of plotting graphically the relation between body length and wing size.

Mr. W. V. Harris exhibited living specimens of a dry-wood termite, *Kalotermes* nr. *jouteli*, Banks, recently found at Bethnal Green in a consignment of Lignum Vitae timber from Santo Domingo. The considerable damage to sapwood which the galleries of this termite had caused were seen in logs in which the insects were still living.

Specimens were also exhibited of an American damp-wood termite, *Zootermopsis angusticollis* (Hagen), received during August, from a consignment of Douglas Fir imported from North America. Unfortunately the specimens had been preserved and the infested wood was stated to have been destroyed before the source could be tracked down. This insect is native to the forests of pine, fir and redwood which stretch along the Pacific Coast of North America from the Mexican border to Vancouver. It lives in rotten logs and dead branch stubs as a rule, but is recorded damaging telegraph poles and the timberwork of houses.

Mr. P. F. Mattingly exhibited a larva of *Culex* (*Culiciomyia*) *termi* Thurman, a new species of mosquito recently found in Thailand. The larvae were found in elephant tracks containing water heavily polluted with elephant dung. They are remarkable in having a siphon more than twice as long as any previously known (more than twice the length of the body of the larva). He said that the functional significance of these very long narrow siphons was not known. Very short siphons were commonly associated with surface feeding. An extreme example was afforded by *Anopheles*, which lay parallel to and immediately below the surface film and could turn their head through 180° for purposes of feeding. Some *Uranotaenia* adopted a similar posture but many tree-hole breeders, e.g., *Stegomyia*, bent the body upwards in the form of a U and pivoted on the short siphon. In some *Ficalbia* one pair of siphonal valves was modified to form hooks for attachment to aquatic vegetation and more extreme modification led to the highly specialized siphon of *Taeniorhynchus*, which obtained oxygen by piercing the sub-aquatic tissues of water plants. Some species had greatly enlarged siphonal valves used for trapping bubbles of oxygen transpired by aquatic plants. Curvature of the siphon in certain species appeared to be associated with the habit of resting upside down on the bottom of the breeding place, the siphon being bent forward between the dorsal surface and the substrate. In some species groups there appeared to be a correlation between the shape of the siphon and the structure of the male phallosome and this deserved further study. A particularly interesting example was afforded by the two African species of *Theobaldia*. One had a normal siphon with intense sclerotization of the phallosome and the other intense sclerotization of the siphon with normal phallosome.

Mr. A. E. Gardner exhibited : (1) The dragonfly *Chlorocypha caligata* (Selys) taken on 22nd September, 1952, at Shimpa Hills, Kenya, by E. C. G. Pinhey. (2) *Zygonyx natalensis* (Martin) taken on 26th December, 1952, at Assob Falls, Nigeria by Mr. R. M. Gambles. These species were exhibited to illustrate the paper read by Dr. N. E. Hickin.

Mr. E. P. Wiltshire exhibited specimens of *Allophyes asiatica* Staudinger from the Middle East. He said this genus was best known by its British representative, *A. oxyacanthae* L. ; a number of new species had recently been recognized or described, including one from Spain and four from the Middle East.

Dr. N. E. Hickin gave a paper, illustrated by colour slides and a short film in colour, on some East African Trichoptera, an abstract of which appeared on page 30.

A short discussion followed in which Professor G. C. Varley asked whether there was any possibility that the apparent absence of Caddis flies in Lake Victoria was due to the fact that they lived in deeper water out of reach of hand nets. Dr. Hickin replied that he had waded and dredged down to ten feet and found nothing.

Dr. F. van Emden asked whether any terrestrial Trichoptera larvae were known from Africa. Dr. Hickin replied that he did not know of any and Mr. Kimmins added that there were no records in the literature.

E. B. BRITTON, *Honorary Secretary.*

The next meeting will be held on 7th December at 5.30 p.m.

ADDITIONS TO THE LIBRARY.

Presented.

Stillson, Blanche. *Wings, insects, birds, men.* 8vo. London (Gollancz), 1955. [The Publishers.]

Skaife, S. H. *Dwellers in Darkness: an introduction to the study of Termites.* 8vo. London (Longmans), 1955. [The Publishers.]

Purchased.

Bonelli, François André. *Observations entomologiques.* 2 pts. 8vo. Turin. 1809–1813.

In addition, separates have been presented by Mr. A. E. Gardner; Smithsonian Institution; State Plant Board of Florida; Dr. T. T. Macan; Mr. R. B. Lea; United States Department of Agriculture; Trustees of the British Museum; American Entomological Society; Dr. W. E. China; Professor P. A. Buxton, C.M.G., F.R.S.; Museu nacional, Rio de Janeiro; Freshwater Biological Association; Dr. C. A. Clarke, F.R.C.P.; Dr. P. S. Corbet; Dr. W. Peters, M.R.C.S.; Director of Agriculture, British Guiana; International Committee for Locust Prevention in the French Sudan.

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